

## **Future Water Needs Task Group Report**

### **Information Assessment 1: Comparison of *Outlook* Projections with Current OFM Population Projections**

The CPSI Future Water Needs Task Group determined that it would be necessary to confirm that the population projections used in the 2001 *Central Puget Sound Regional Water Supply Outlook* report are still valid. A comparison was conducted of current OFM data from the 2002 census and the demographic forecasts used in the *Outlook*. The conclusion of that analysis was that the PSRC demographic forecasts used in the *Outlook* have not been rendered obsolete by the 2002 census. In fact, at the county level, they are exceedingly close to the new OFM forecasts.

Water demand in the *Outlook* is forecast at the individual utility level. Thus, the forecast model requires demographic forecasts by small geographic areas. When 2000 census-based forecasts of households and employment by census tract or TAZ become available, they should be incorporated into the *Outlook* water demand model. In the meantime, we can use the current *Outlook* forecasts with some confidence, knowing that they are consistent with the State Office of Financial Management's county population forecasts.

### **Information Assessment 2: Central Puget Sound Regional Water Supply Outlook**

One of the tasks assigned to the Future Water Needs Task Group of the Central Puget Sound Initiative was to review and assess information on municipal water supply needs in the Central Puget Sound region. The main source of information considered is the *Central Puget Sound Regional Water Supply Outlook* report, produced in year 2001 by the Central Puget Sound Water Suppliers' Forum. The Task Group focused on three elements of the *Outlook* report: demand projections, supply inventory, and conservation scenarios.

Demand Projections: The demand projections contained in the *Outlook* offer a comprehensive and up-to-date assessment of current and projected municipal water supply needs in the Central Puget Sound Region. The demand projections use demographic projections from the Puget Sound Regional council, and this demographic information is consistent with planning by local jurisdictions under the Growth Management Act. Results are also consistent with newer demographic projections produced by the State OFM subsequent to the *Outlook*. The Task Group notes that some important aspects of regional water needs are not covered in the *Outlook*, such as self-supplied industrial water use and agricultural water use. The *Outlook* accounted for water use by individual household wells and small water systems but not on a detailed level, recognizing their relatively small quantity impact in the regional context. In the local context (e.g. at the scale of small tributary basins) it may be important to improve estimates of these uses. Nonetheless, at the regional level the *Outlook* provides the best set of information available on current and projected municipal water needs.

Although the approach used to develop the Central Puget Sound Forum's *Outlook* was validated through the CPSI process, it must be acknowledged that the baseline water demands shown in the *Outlook* are not reflective of current conservation plans and investments within the region. As a result, actual municipal water supply needs are expected to be less than the baseline

demands shown in the *Outlook*. The approach used to develop the *Outlook* was selected to assure that the process could be easily reproduced in the future, and to minimize the subjectivity in the computation of the baseline demands.

The conservation section of the *Outlook* provides a range of conservation investments that represent the result of four alternative levels of investment. Each increase in the level of investment equates to an increase in the regional water conservation. The *Outlook* illustrates the effects of the four investment levels and the resulting reduction in the estimated future regional water needs.

This Task Group recommends that conservation goals developed in the Tools Task Group be used to refine and further clarify expected future demand.

Supply Inventory: The *Outlook's* inventory of existing municipal water supply sources provides a useful identification and categorization of both regional and local sources. However, as discussed in the *Outlook* report, the quantification of source capacity and water rights is subject to considerable uncertainty. This is due to a number of factors, such as uncertainty regarding a utility's ability to use existing water rights due to infrastructure limitations; legal uncertainties regarding utilities' ability to use inchoate water; potential discontinuation of some sources; uncertainties over quantities of water needed in streams to support fish habitat; uncertainties related to tribal reserved rights. A major unknown is a lack of understanding of the overall supply inventory available in the Central Puget Sound region, how water moves through the region, and the impact of withdrawals on water quantity, water quality and fish habitat.

In general, the Task Group noted that, based on the *Outlook*, existing water supply sources appear inadequate to meet projected municipal needs in some local areas. In the absence of solutions to this problem, local shortfalls are expected, despite the apparent adequacy of supply for the region as a whole. This is due to the difficulty of moving and sharing water supplies, for a variety of technical, financial, and legal/institutional reasons. Efforts to meet future needs in the region should examine potential solutions at both the local and regional levels, to resolve these expected shortfalls.

Conservation Scenarios: The *Outlook's* development of conservation scenarios for the region provides a valuable contribution to the discussion of conservation's ongoing role in water resource management in the region. The *Outlook* shows that water conservation techniques are being applied in the region, but there is low consistency from place to place. Conservation can help to reduce demands for municipal water supply, but there are substantial costs associated with increasing levels of conservation. The Task Group concurs with the *Outlook's* finding that many key issues remain to be resolved to fully support water conservation efforts in the region. These issues include: political acceptance of conservation objectives and approaches; education and outreach needs; effects of pricing and rate structures; methods for evaluating economic aspects of conservation; balancing regional coordination with local control; relationship to State water law; the State role in promoting conservation; and coordination between land use decisions and water resource management.

The Future Water Needs Task Group conducted a review of the Conservation Scenarios and the Conservation Information sections of the *Outlook*. The Task Group recommends that

these sections be considered by the Tools Task Group to develop specific recommendations related to water conservation. Some specific questions that warrant attention and consideration include:

Should the State invest resources to minimize or eliminate the numerous uncertainties highlighted in the Conservation Scenarios?

State law requires that water utilities implement all cost-effective conservation measures. Under the heading of “Methods for Evaluating Economic Aspects of Conservation,” the Conservation Scenarios section of the *Outlook* presents a thorough discussion of the complexities of conducting an economic evaluation of conservation measures. Should the State commit resources to developing a methodology for conducting such an evaluation?

Tables A and B in Appendix B, Conservation Information, of the *Outlook* suggests a very high potential for improved performance through increasing conservation measure penetration levels for utilities of all sizes. Should new source development be made contingent on meeting minimum performance levels in regard to conservation?

Comments submitted by Task Group members:

A recommendation may include a conservation audit of the out-of-stream users to help with identifying current and projected future uses and needs.

Public water systems should be included in an overall water assessment effort along with self-supplied users. How else will a more accurate water budget be determined? Look at a phased 1 – 4 year assessment schedule and have voluntary audits occur with offers to do a site visit to evaluate conservation strategies.

### **Information Assessment 3: Agricultural and Industrial Self-Supplied Water Users**

Depending on the industry involved, industrial manufacturing plants can use large volumes of water. Some manufacturing plants purchase water from a municipal water system. Others have their own wells or surface water diversions to meet their needs. Still others rely on a combination of water supplied by a municipal system and their own sources. Industrial facilities that have their own water source to meet their needs at a specific site are termed “self-supplied.” These facilities typically have a permit or certificate issued by the Department of Ecology, authorizing use of water from a specific surface or ground water source for industrial purposes at a specific site, or a claim filed for water use. Claims cover water uses that began prior to promulgation of the State Water code in 1917 (for surface water), or the Ground Water Code in 1945 (for ground water).

In the past, data on self-supplied water uses has not been collected systematically. Most large self-supplied industrial facilities probably collect their own data to meet internal needs associated with managing operations. However, this data has not been reported to State or local government agencies.

Data on the quantity of water associated with water rights is available in a statewide database for permits and certificates. However, similar data is not compiled in a database for

claims. Quantities of water associated with claims are listed on forms submitted by each claimant and stored in Ecology files. For permits, certificates, and claims, the quantity of water associated with the water right can be very different from the quantity of water actually used.

For these reasons, it is difficult to estimate the quantities of water actually used by self-supplied industrial users. This is true not only in the Central Puget Sound region but throughout the State.

The Future Water Use Task Group recommends that an initial assessment of these self-supplied users be conducted to determine the overall impact on water supplies. Assessments should be conducted on the regional and sub-WRIA scale. Regional assessment will demonstrate the order of magnitude impact. Sub-WRIA information will be necessary to determine impacts to specific water bodies.

The Task Group recommends that an initial assessment be conducted using Department of Ecology data from the WRATS database. If initial assessments indicate a need for further evaluation, surveys or metering data may be required. One option for obtaining better information could be to direct Ecology to use existing authorities to require that source data be collected and submitted by these self-supplied water users.

#### **Information Assessment 4: Exempt Wells**

The CPSI Future Water Use Task Group addressed exempt wells from the perspective of determining whether exempt wells use of water is significant enough to warrant our attention and integration into the ultimate CPSI strategy for water management in our region. A quick look at existing materials that discuss current and future water supply conditions in the Central Puget Sound area suggests that neither local planning efforts nor State records provide detailed tracking and assessment of the quantity of water being withdrawn by these wells in the region.

Seattle's Consolidated Report includes an estimate of the number of households served by exempt wells in King County. Seattle Public Utilities estimates that about 5% of the King County households are served by exempt wells (approximately 23,000 households from a total of 463,000). This information is referenced in the *Outlook* in Section 3 but there are no similar estimates for Pierce and Snohomish Counties.

Even with this lack of specific data, the general consensus of the Task Group was that the cost of developing that information was not justified on the regional scale. Most were confident that the results would indicate that, regionally, the impact was small. On the local scale, however, there were several members who thought that some analysis should be conducted when new diversions or withdrawals are being proposed. It is, therefore, recommended that the Regional Strategy include development of an institutional mechanism, implemented at the local level, to assess the impact of exempt wells when new diversions or withdrawals are being proposed or in areas where fish populations are being impacted by low flows.

The Task Group also identified a number of questions related to exempt wells that should be considered in the development of the regional Strategy. The Group generally agreed that there is a need to deal with exempt wells, but there was a lack of consensus whether to recommend action by the State or local governments.

#### Quantifying Exempt Wells:

- What are the current effects of exempt wells in the regional water budget? What quantity of water is withdrawn by these wells in our region in an average year?
- Is there a potential increased effect of these existing exempt wells if they were used to their maximum allowable capacity?
- What is the potential future effect of additional new exempt wells?

#### Exiting Information/Information Needs:

- Do existing studies (Outlook and Consolidated Report) provide enough information on exempt wells for future planning?
- Does this Task Group have enough information about exempt wells to integrate their influence into a regional water needs concept and strategy?
- If we could get it, what additional information about exempt wells would we like in order to facilitate our development of a regional water needs strategy?

#### Effect of Exempt Wells on Water Supply and Future Needs:

- How do and will these wells affect water sources that communities currently depend upon?
- How will recent legal court decisions (Campbell & Gwinn) affect the future development of exempt wells in our region?
- How can this group aim for certainty in regional supply if exempt wells continue to tap the limited water resources of the region in an unmonitored fashion?
- Should a regional water needs strategy include a recommendation about limiting future exempt wells?
- Should a regional water needs strategy include a recommendation about increasing or improving State or local identification, monitoring, and protection efforts for exempt wells?

#### **Information Assessment 5: Small Water System Problems**

The CPSI Future Water Needs Task Group assessed the need for new and/or replacement supplies resulting from small water systems that are unable to meet Safe Drinking Water Act (SDWA) capacity requirements (operational, managerial and financial) in addition to water quality issues such as groundwater under the influence of surface water (GWI) and exceedance of the arsenic MCL.

The Outlook did not attempt to estimate the number of small water systems or the populations served by those systems that might require new sources of supply as a result of not being able to meet SDWA capacity requirements including potential water quality issues (e.g. GWI and new arsenic MCL). Seattle Consolidated Report includes an estimate that 2% of the population in King County, or approximately 35,000 people, are potentially affected. There are currently no estimates for Pierce and Snohomish Counties. Department of Health (DOH) data sources indicate a small number of Group A & B systems in the region are affected by the new arsenic MCL, however the affected systems generally are not located near existing systems that could be alternate sources of supply, therefore requiring new sources or, more realistically, expensive treatment.

The Task Group finds that the magnitude of the problem in terms of future water quantity needs is not significant on a regional level, but small system problems are a tremendous drain on DOH and county Environmental Health and planning agencies, from a perspective of public health and safety. Small system problems are also a drain on local planning agencies from a perspective of Growth Management Act adequacy requirements and receivership implications.

This Task Group feels that it is not warranted to attempt to quantify the future source needs of potential failing small systems for the purposes of this section of the report. However, the Group recommends that this problem be highlighted and a strategy to address this problem be developed as a part of the overall CPSI strategy for water resource management in the region.

#### **Information Assessment 6: Instream Flow Needs**

The Instream Flow Task Group will identify the necessary information and provide recommendations for the Strategy.

#### **Information Assessment 7: Climate Change Impact**

A great deal of general information has been developed that indicates that current trends in climate change could result in reduced snow pack and associated runoff. This could have a direct impact to the large water suppliers that depend upon surface supplies in the Central Puget Sound Region. This may also impact groundwater supplies over time.

The Task Group recommends that the State initiate a targeted research effort to evaluate the potential impacts to water supplies in the region. Academic institutions in partnership with the State and local governments and utilities in the region should conduct this effort.

#### **Information Assessment 8: Regional Water Budget**

The Task Group considered that, in order to make informed decisions, a regional water budget must be developed. A water budget is needed to begin to understand how water moves throughout the region, and the impact of withdrawals and diversions upon water quantity, water quality and fish habitat. To be most useful, a water budget should provide information on the regional, WRIA and sub-WRIA level.

A water balance sufficient to serve regional water managers' needs has not been developed to date. Such an undertaking would require significant resources and partnerships

with local governments, utilities, engineering firms and academic institutions. The Group did not reach consensus to recommend a commitment to include the development of a water budget in the Strategy.